

At pages 52-53, replace the paragraph at page 52, line 30 beginning

"Antiserum to OMP21..." with the following:

P
C3
Antiserum to OMP21 were prepared by resolving OMP21 polypeptide from OG extracts of *M. catarrhalis* strain ATCC 49143 in a DEAE SEPHAROSE™ ion exchange chromatography column. The fraction containing OMP21 was injected into a rabbit to generate antiserum to OMP21 polypeptide. In addition, affinity purified antibody was prepared by injecting rabbits with blebs from *Moraxella catarrhalis* and purified using a cyanogen bromide activated agarose gel with immobilized OMP21. The gel was reacted with the antiserum and non-reactive antibodies and proteins were washed from the gel. Reactive antibodies were eluted from the gel using 100 mM glycine, pH2.5. The eluted antibodies were washed with PBS and concentrated. The concentrate was further purified by reacting with OMP21-deletion mutants of *M. catarrhalis*. The antiserum was analyzed by Western blots as described in Section 6.1.4., examined for complement-mediated cytotoxic activity against *M. catarrhalis* as described in Section 7 and inhibition of nasopharyngeal binding as described in Section 13 (*infra*).

IN THE CLAIMS:

Please cancel Claim 74 without prejudice.

Please amend Claims 9, 11, 16, and 76-77 to read as follows:

C4
9. (Twice Amended) An isolated nucleic acid molecule encoding an OMP21 protein wherein said OMP21 protein comprises the amino acid sequence of SEQ ID NO: 7, or a complement of said nucleic acid molecule.

C5
11. (Twice Amended) An isolated nucleic acid molecule encoding OMP21 protein of a *Moraxella catarrhalis* strain, said OMP21 protein having molecular

80

C

weight of about 16 kD to about 20 kD as determined by reducing SDS-PAGE, using trypsin inhibitor and carbonic anhydrase, respectively, as 21.5 kD and 31 kD molecular weight standards and wherein said nucleic acid molecule comprises a sequence selected from the group consisting of:

- a) a nucleic acid sequence of any of SEQ ID NO: 2-6 and 8-14;
- b) a nucleic acid sequence encoding the amino acid sequence of SEQ ID NO: 1 or 7; and
- c) a nucleic acid sequence which hybridizes at 68 degrees C in 0.5M NaHPO₄ (pH 7.2)/1 mM EDTA/ 7% SDS to any one of the sequences of a) or b);

and said nucleic acid molecule encoding a polypeptide that elicits an immune response to *Moraxella catarrhalis* when administered to an animal; or a complement of said nucleic acid molecule.

16. (Twice amended) An isolated host cell transformed with the vector of
Claim 13.

76. (Amended) An isolated host cell transformed with the expression
vector of Claim 75.

77. (Amended) An isolated host cell transformed with the expression
vector of Claim 20.

Please add new Claims 79-82 as follows:

79. (New) An isolated nucleic acid molecule encoding an OMP21 protein
of a *Moraxella catarrhalis* strain, wherein said protein has a molecular weight of about 16kD
to about 20kD as determined by reducing SDS-PAGE using trypsin inhibitor and carbonic